

1 **R317. Environmental Quality, Water Quality.**

2 **R317-4. Onsite Wastewater Systems.**

3 **R317-4-1. Definitions.**

4 1.1. "Absorption bed" means an absorption system consisting
5 of a covered, gravel-filled bed into which septic tank effluent is
6 discharged through specially designed distribution pipes for
7 seepage into the soil.

8 1.2. "Absorption system" means a device constructed to
9 receive and to distribute effluent in such a manner that the
10 effluent is effectively filtered and retained below ground
11 surface.

12 1.3. "Absorption trench" means standard trenches, shallow
13 trenches with capping fill, and chambered trenches constructed to
14 receive and to distribute effluent in such a manner that the
15 effluent is effectively filtered and retained below ground
16 surface.

17 1.4. "Alternative onsite wastewater system" means a system
18 for treatment and disposal of domestic wastewater or wastes which
19 consists of a building sewer, a septic tank or other sewage
20 treatment or storage unit, and a disposal facility or method which
21 is not a conventional system; but not including a surface
22 discharge to the waters of the state.

23 1.5. "At-Grade" System means an alternative type of onsite
24 wastewater system where the bottom of the absorption system is
25 placed at or below the elevation of the existing site grade, and
26 the top of the distribution pipe is above the elevation of
27 existing site grade, and the absorption system is contained within
28 a fill body that extends above that grade.

29 1.6. "Bedrock" means the solid rock beneath the soil which
30 is produced by the gradual weathering of bedrock, through
31 physical and chemical processes leading to increasingly smaller
32 and finer particles, loose sediments, or other unconsolidated
33 material, and superficial rock.

34 [1.6]1.7. "Bedroom" means any portion of a dwelling which is
35 so designed as to furnish the minimum isolation necessary for use
36 as a sleeping area. It may include, but is not limited to, a den,
37 study, sewing room, sleeping loft, or enclosed porch. Unfinished
38 basements shall be counted as a minimum of one additional bedroom.

39 [1.7]1.8. "Building sewer" means the pipe which carries
40 wastewater from the building drain to a public sewer, an onsite
41 wastewater system or other point of disposal. It is synonymous
42 with "house sewer".

43 [1.8]1.9. "Chambered trench" means a type of absorption
44 system where the media consists of an open bottom, chamber
45 structure of an approved material and design, which may be used as
46 a substitute for the gravel media with a perforated distribution
47 pipe.

48 [1.9]1.10. "Condominium" means the ownership of a single
49 unit in a multi-unit project together with an undivided interest
50 in common, in the common areas and facilities of the property.

51 ~~[1.10]~~1.11. "Conventional system" means an onsite wastewater
52 system which consists of a building sewer, a septic tank, and an
53 absorption system consisting of a standard trench, a shallow
54 trench with capping fill, a chambered trench, a deep wall trench,
55 a seepage pit, or an absorption bed.
56 ~~[1.11]~~1.12. "Curtain drain" means any ground water
57 interceptor or drainage system that is gravel backfilled and is
58 intended to interrupt or divert the course of shallow ground water
59 or surface water away from the onsite wastewater system.
60 ~~[1.12]~~1.13. "Deep wall trench" means an absorption system
61 consisting of deep trenches filled with clean, coarse filter
62 material, with a minimum sidewall absorption depth of 24 inches of
63 suitable soil formation below the distribution pipe, into which
64 septic tank effluent is discharged for seepage into the soil.
65 ~~[1.13]~~1.14. "Division" means the Utah Division of Water
66 Quality.
67 ~~[1.14]~~1.15. "Disposal area" means the entire area used for
68 the subsurface treatment and dispersion of septic tank effluent by
69 an absorption system.
70 ~~[1.15]~~1.16. "Distribution box" means a watertight structure
71 which receives septic tank effluent and distributes it
72 concurrently, in essentially equal portions, into two or more
73 distribution pipes leading to an absorption system.
74 ~~[1.16]~~1.17. "Distribution pipe" means approved perforated
75 pipe used in the dispersion of septic tank effluent into an
76 absorption system.
77 ~~[1.17]~~1.18. "Domestic wastewater" means a combination of the
78 liquid or water-carried wastes from residences, business
79 buildings, institutions, and other establishments with installed
80 plumbing facilities, together with those from industrial
81 establishments, excluding non-domestic wastewater. It is
82 synonymous with the term "sewage".
83 ~~[1.18]~~1.19. "Domestic septage" means the semi-liquid
84 material that is pumped out of septic tanks receiving domestic
85 wastewater. It consists of the sludge, the liquid, and the scum
86 layer of the septic tank.
87 ~~[1.19]~~1.20. "Drainage system" means all the piping within
88 public or private premises, which conveys sewage or other liquid
89 wastes to a legal point of treatment and disposal, but does not
90 include the mains of a public sewer system or a public sewage
91 treatment or disposal plant.
92 ~~[1.20]~~1.21. "Drop box" means a watertight structure which
93 receives septic tank effluent and distributes it into one or more
94 distribution pipes, and into an overflow leading to another drop
95 box and absorption system located at a lower elevation.
96 ~~[1.21]~~1.22. "Dwelling" means any structure, building, or any
97 portion thereof which is used, intended, or designed to be
98 occupied for human living purposes including, but not limited to,
99 houses, mobile homes, hotels, motels, apartments, business, and
100 industrial establishments.

101 ~~[1.22]~~1.23. "Earth fill" means an excavated or otherwise
102 disturbed suitable soil which is imported and placed over the
103 native soil. It is characterized by having no distinct horizons
104 or color patterns, as found in naturally developed undisturbed
105 soils.

106 ~~[1.23]~~1.24. "Effluent lift pump" means a pump used to lift
107 septic tank effluent to a disposal area at a higher elevation than
108 the septic tank.

109 ~~[1.24]~~1.25. "Ejector pump" means a device to elevate or pump
110 untreated sewage to a septic tank, public sewer, or other means of
111 disposal.

112 ~~[1.25]~~1.26. "Experimental onsite wastewater system" means an
113 onsite wastewater treatment and disposal system which is still in
114 experimental use and requires further testing in order to provide
115 sufficient information to determine its acceptance.

116 ~~[1.26]~~1.27. "Final local health department approval" means,
117 for the purposes of the grandfather provisions in R317-4-2 (Table
118 1, footnote a) and R317-4-3, the approval given by a local health
119 department which would allow construction and installation of
120 subdivision improvements. Note: Even though final local health
121 department approval may have been given for a subdivision,
122 individual lot approval would still be required for issuance of a
123 building permit on each lot.

124 ~~[1.27]~~1.28. "Ground water" means that portion of subsurface
125 water that is in the zone of soil saturation.

126 ~~[1.28]~~1.29. "Ground water table" means the surface of a body
127 of unconfined ground water in which the pressure is equal to that
128 of the atmosphere.

129 ~~[1.29]~~1.30. "Ground water table, perched" means unconfined
130 ground water separated from an underlying body of ground water by
131 an unsaturated zone. Its water table is a perched water table.
132 It is underlain by a restrictive strata or impervious layer.
133 Perched ground water may be either permanent, where recharge is
134 frequent enough to maintain a saturated zone above the perching
135 bed, or temporary, where intermittent recharge is not great or
136 frequent enough to prevent the perched water from disappearing
137 from time to time as a result of drainage over the edge of or
138 through the perching bed.

139 ~~[1.30]~~1.31. "Impervious strata" means a layer which prevents
140 water or root penetration. In addition, it shall be defined as
141 having a percolation rate greater than 60 minutes per inch.

142 ~~[1.31]~~1.32. "Invert" is the lowest portion of the internal
143 cross section of a pipe or fitting.

144 ~~[1.32]~~1.33. "Liquid waste operation" means any business
145 activity or solicitation by which liquid wastes are collected,
146 transported, stored, or disposed of by a collection vehicle. This
147 shall include, but not be limited to, the cleaning out of septic
148 tanks, sewage holding tanks, chemical toilets, and vault privies.

149 ~~[1.33]~~1.34. "Liquid waste pumper" means any person who
150 conducts a liquid waste operation business.

151 ~~[1.34]~~1.35. "Local health department" means a city-county or
152 multi-county local health department established under Title 26A.

153 ~~[1.35]~~1.36. "Lot" means a portion of a subdivision, or any
154 other parcel of land intended as a unit for transfer of ownership
155 or for development or both and shall not include any part of the
156 right-of-way of a street or road.

157 ~~[1.36]~~1.37. "Malfunctioning or failing system" means an
158 onsite wastewater system which is not functioning in compliance
159 with the requirements of this regulation and includes, but is not
160 limited to, the following:

161 A. Absorption systems which seep or flow to the surface of
162 the ground or into waters of the state.

163 B. Systems which have overflow from any of their components.

164 C. Systems which, due to failure to operate in accordance
165 with their designed operation, cause backflow into any portion of
166 a building plumbing system.

167 D. Systems discharging effluent which does not comply with
168 applicable effluent discharge standards.

169 E. Leaking septic tanks.

170 ~~[1.37]~~1.38. "Maximum ground water table" means the highest
171 elevation that the top of the "ground water table" or "ground
172 water table, perched" is expected to reach for any reason over the
173 full operating life of the onsite wastewater system at that site.

174 ~~[1.38]~~1.39. "Mound System" means an alternative onsite
175 wastewater system where the bottom of the absorption system is
176 placed above the elevation of the existing site grade, and the
177 absorption system is contained in a mounded fill body above that
178 grade.

179 ~~[1.39]~~1.40. "Non-domestic wastewater" means process
180 wastewater originating from the manufacture of specific products.

181 Such wastewater is usually more concentrated, more variable in
182 content and rate, and requires more extensive or different
183 treatment than domestic wastewater.

184 ~~[1.40]~~1.41. "Non-public water source" means a culinary water
185 source that is not defined as a public water source.

186 ~~[1.41]~~1.42. "Onsite Wastewater System" means an underground
187 wastewater disposal system for domestic wastewater which is
188 designed for a capacity of 5,000 gallons per day or less, and is
189 not designed to serve multiple dwelling units which are owned by
190 separate owners except condominiums. It usually consists of a
191 building sewer, a septic tank and an absorption system.

192 ~~[1.42]~~1.43. "Percolation rate" means the time expressed in
193 minutes per inch required for water to seep into saturated soil at
194 a constant rate during a percolation test.

195 ~~[1.43]~~1.44. "Percolation test" means the method used to
196 measure the percolation rate of water into soil as described in
197 these rules.

198 ~~[1.44]~~1.45. "Permeability" means the rate at which a soil
199 transmits water when saturated.

200 ~~[1.45]~~1.46. "Person" means an individual, trust, firm,

estate, company, corporation, partnership, association, state, state or federal agency or entity, municipality, commission, or political subdivision of a state (Section 19-1-103).

~~[1.46]~~1.47. "Pollution" means any man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of any waters of the state, unless the alteration is necessary for public health and safety (Section 19-5-102).

~~[1.47]~~1.48. "Public health hazard" means, for the purpose of this rule, a condition whereby there are sufficient types and amounts of biological, chemical, or physical agents relating to water or sewage which are likely to cause human illness, disorders or disability. These include, but are not limited to, pathogenic viruses and bacteria, parasites, toxic chemicals and radioactive isotopes. A malfunctioning onsite wastewater system constitutes a public health hazard.

~~[1.48]~~1.49. "Public water source" means a culinary water source, either publicly or privately owned, providing water for human consumption and other domestic uses, as defined in R309.

~~[1.49]~~1.50. "Regulatory Authority" means either the Utah Division of Water Quality or the local health department having jurisdiction.

~~[1.50]~~1.51. "Replacement area" means sufficient land with suitable soil, excluding streets, roads, and permanent structures, which complies with the setback requirements of these rules, and is intended for the 100 percent replacement of absorption systems.

~~[1.51]~~1.52. "Restrictive layer" means a layer in the soil that because of its structure or low permeability does not allow water entering from above to pass through as rapidly as it accumulates. During some part of every year, a restrictive layer is likely to have temporarily perched ground water table accumulated above it.

1.53. Scarification - loosening and breaking up of soil.

~~[1.52]~~1.54. "Scum" means a mass of sewage solids floating on the surface of wastes in a septic tank which is buoyed up by entrained gas, grease, or other substances.

~~[1.53]~~1.55. "Seepage pit" means an absorption system consisting of a covered pit into which septic tank effluent is discharged.

~~[1.54]~~1.56. "Septic tank" means a watertight receptacle which receives the discharge of a drainage system or part thereof, designed and constructed so as to retain solids, digest organic matter through a period of detention and allow the liquids to discharge into the soil outside of the tank through an absorption system meeting the requirements of these rules.

~~[1.55]~~1.57. "Septic tank effluent" means partially treated sewage which is discharged from a septic tank.

~~[1.56]~~1.58. "Sewage holding tank" means a watertight receptacle which receives water-carried wastes from the discharge of a drainage system and retains such wastes until removal and subsequent disposal at an approved site or treatment facility.

251 ~~[1.57]~~1.59. "Shall" means a mandatory requirement except
252 when modified by action of the Department on the basis of
253 justifying facts submitted as part of plans and specifications for
254 a specific installation.

255 ~~[1.58]~~1.60. "Shallow trenches with capping fill" means an
256 absorption trench which meets all of the requirements of standard
257 trenches except for the elevation of the installed trench. The
258 minimum depth of installation is 10 inches from the natural
259 existing grade to the trench bottom. The gravel and soil fill
260 required above the pipe are placed as a "cap" to the trenches,
261 installed above the natural existing grade.

262 ~~[1.59]~~1.61. "Should" means recommended or preferred and is
263 intended to mean a desirable standard.

264 ~~[1.60]~~1.62. "Single-family dwelling" means a building
265 designed to be used as a home by the owner or lessee of such
266 building, and shall be the only dwelling located on a lot with the
267 usual accessory buildings.

268 ~~[1.61]~~1.63. "Sludge" means the accumulation of solids which
269 have settled in a septic tank or a sewage holding tank.

270 ~~[1.62]~~1.64. "Soil exploration pit" means an open pit dug to
271 permit examination of the soil to evaluate its suitability for
272 absorption systems.

273 ~~[1.63]~~1.65. "Standard Trench" means an absorption system
274 consisting of a series of covered, gravel-filled trenches into
275 which septic tank effluent is discharged through specially
276 designed distribution pipes for seepage into the soil.

277 ~~[1.64]~~1.66. "Waste" or "Pollutant" means dredged spoil,
278 solid waste, incinerator residue, sewage, garbage, sewage sludge,
279 munitions, chemical wastes, biological materials, radioactive
280 materials, heat, wrecked or discarded equipment, rock, sand,
281 cellar dirt, and industrial, municipal, and agricultural waste
282 discharged into water (Section 19-5-102).

283 ~~[1.65]~~1.67. "Wastewater" means sewage, industrial waste or
284 other liquid substances which might cause pollution of waters of
285 the state. Intercepted ground water which is uncontaminated by
286 wastes is not included.

287 ~~[1.66]~~1.68. "Waters of the state" means all streams, lakes,
288 ponds, marshes, watercourses, waterways, wells, springs,
289 irrigation systems, drainage systems, and all other bodies or
290 accumulations of water, surface and underground, natural or
291 artificial, public or private, which are contained within, flow
292 through, or border upon this state or any portion thereof, except
293 that bodies of water confined to and retained within the limits of
294 private property, and which do not develop into or constitute a
295 nuisance, or a public health hazard, or a menace to fish and
296 wildlife, are not "waters of the state" (Section 19-5-102).

298 **R317-4-2. Onsite Wastewater Systems**~~Administrative~~ Requirements.

299 2.1. Scope. This rule shall apply to onsite wastewater

300 systems.

301 2.2. Nothing contained in this rule shall be construed to
302 prevent the permitting local health department from:

303 A. adopting stricter requirements than those contained
304 herein;

305 B. issuing a renewable operating permit at a frequency not
306 exceeding five years with an inspection showing a satisfactory
307 performance of the permitted system by the department's staff
308 before renewal;

309 C. taking necessary steps for ground water quality
310 protection through adoption of a ground water quality protection
311 management policy based on a ground water management study, or a
312 onsite systems management planning policy and land use planning
313 through the county's agency;

314 D. prohibiting any alternative system within the
315 department's jurisdiction;

316 E. assessing fees for administration of alternative systems

317 F. requiring the conventional and alternative system in its
318 jurisdiction, be placed under an umbrella of:

319 1. a responsible management entity overseen by the local
320 health department; or,

321 2. a contract service provider overseen by the local health
322 department; or

323 3. a management district, body politic, created by the
324 county for the purpose of operation, maintenance, repairs and
325 monitoring of alternative or all onsite systems;

326 G. The local health department having jurisdiction must
327 obtain approval from the Utah Water Quality Board to administer
328 alternative systems program, as outlined in this section, before
329 permitting alternative systems.

330 H. The local health department request for approval must
331 include:

332 1. A description of its plan to properly manage these
333 systems to protect public health. This plan must include:

334 a. A description of review, inspection and monitoring
335 procedures of these systems;

336 b. Resolutions of the Local Board of Health and the County
337 Commission supporting this request

338 c. A description of the technical capability and training
339 plans of the staff, and availability of resources to adequately
340 manage the increased work load; and,

341 d. A statement from the county attorney of the county's
342 legal authority to implement and enforce correction of
343 malfunctioning systems and its commitment to exercise this
344 authority.

345 I. An agreement to:

346 1. advise the owner of the system of the type of system,
347 and information concerning risk of failure, level of maintenance
348 required, financial liability for repair, modification or
349 replacement of a failed system and periodic monitoring

requirements;

2. ensure the existence of the alternative system is recorded on the deed of ownership for that property;

3. provide oversight of installed systems;

4. inspect all installed systems at frequency specified in this rule, through:

a. the department's staff, or,

b. a contracted service provider, or,

c. a responsible management entity, or,

d. a management district *body politic* created by the county for the purpose of managing onsite systems;

e. maintain records of all installed systems, failures, modifications, repairs and all inspections recording the condition of the system at the time of inspection such as, but not limited to, overflow, surfacing, ponding and nuisance;

5. Submit an annual report on or before September 1 of the calendar year, to the Utah Water Quality Board showing:

a. A summary of a ground water quality protection management policy based on a ground water management study, or a onsite systems management planning policy and land use planning through the county's agency, including steps taken or planned to be taken for implementation of the policy.

b. type and number of systems approved, installed, modified, repaired, failed, inspected;

c. a summary of enforcement actions taken, pending and resolved;

d. a summary of performance of effluent quality showing concentrations of five-day total or carbonaceous biochemical oxygen demand, total suspended solids, nephelometric turbidity units, total nitrogen and *Escherichia Coli* of all installed systems except for at-grade, earth fill and mound systems;

e. a summary of the performance of contractors, responsible management entities, or management districts operating, maintaining and monitoring alternative systems; and,

f. management options followed in the reporting year and planned to be followed in the period after the reporting period.

J. Description of Management options to be followed:

1. Using the health department staff for all inspections and monitoring of permitted alternative systems; or,

2. Contracting with a responsible management entity employing qualified service providers for operating, maintaining and monitoring alternative systems, certified in accordance with R317-11; or,

3. Using a management district, *body politic* created by the county for the purpose of managing onsite systems with an annual performance review; or,

4. An appropriate combination of contract providers or a District, *body politic*.

K. All alternative systems will be inspected as follows:

1. All at-grade, earth fill and mound systems annually by

400 a. the local health department staff, or,
401 b. a contract service provider overseen by the local health
402 department, or,
403 c. a responsible management entity overseen by the local
404 health department, or,
405 d. a management district, body politic created by the
406 county for the purpose of managing onsite systems.
407 2. All packed bed media systems at least twice a year by:
408 a. the local health department staff, or,
409 b. a contract service provider overseen by the local health
410 department, or,
411 c. a responsible management entity overseen by the local
412 health department, or,
413 d. a management district, body politic created by the
414 county for the purpose of managing onsite systems.
415 [2.2]2.3. Failure to Comply With Rules. Any person failing
416 to comply with This rule will be subject to action as specified in
417 Section 19-5-115 and 26A-1-123.
418 [2.3]2.4. Onsite Wastewater System Required. The drainage
419 system of each dwelling, building or premises covered herein shall
420 receive all wastewater (including but not limited to bathroom,
421 kitchen, and laundry wastes) and shall have a connection to a
422 public sewer except when such sewer is not available or
423 practicable for use, in which case connection shall be made as
424 follows:
425 A. To an onsite wastewater system found to be adequate and
426 constructed in accordance with requirements stated herein.
427 B. To any other type of wastewater system acceptable under
428 R317-1, R317-3, R317-5, or R317-560.
429 [2.4]2.5. Flows Prohibited From Entering Onsite Wastewater
430 Systems. No ground water drainage, drainage from roofs, roads,
431 yards, or other similar sources shall discharge into any portion
432 of an onsite wastewater system, but shall be disposed of so they
433 will in no way affect the system. Non domestic wastes such as
434 chemicals, paints, or other substances which are detrimental to
435 the proper functioning of an onsite wastewater system shall not be
436 disposed of in such systems.
437 [2.5]2.6. No Discharge to Surface Waters or Ground Surface.
438 Effluent from any onsite wastewater system shall not be discharged
439 to surface waters or upon the surface of the ground. Sewage shall
440 not be discharged into any abandoned or unused well, or into any
441 crevice, sinkhole, or similar opening, either natural or
442 artificial.
443 [2.6]2.7. Repair of a Failing or Unapproved System. Whenever
444 an onsite wastewater system is found by the regulatory authority
445 to create or contribute to any dangerous or insanitary condition
446 which may involve a public health hazard, a malfunctioning system,
447 or deviates from the plans and specifications approved by such
448 health authorities, the regulatory authority may order the owner
449 to take the necessary action to cause the condition to be

corrected, eliminated or otherwise come into compliance.

[2.7]2.8. Procedure for Wastewater System Abandonment.

A. When a dwelling served by an onsite wastewater system is connected to a public sewer, the septic tank shall be abandoned and shall be disconnected from and bypassed with the building sewer unless otherwise approved by the regulatory authority.

B. Whenever the use of an onsite wastewater system has been abandoned or discontinued, the owner of the real property on which such wastewater system is located shall render it safe by having the septic tank wastes pumped out or otherwise disposed of in an approved manner, and the septic tank filled completely with earth, sand, or gravel within 30 days. The septic tank may also be removed within 30 days, at the owners discretion. The contents of a septic tank or other treatment device shall be disposed of only in a manner approved by the regulatory authority.

Sections R317-4-3 through 10 are not included as there is no change in those sections. A complete copy is available from the Division of Water Quality if desired.

R317-4-11. Alternative [~~Onsite Wastewater~~] Systems.

11.1. General Requirements.

A. The health department will review and approve sufficient design, installation and operating information to produce a successful, properly operating installation from a designer certified at Level 3 in accordance with the requirements of R317-11.

B. The designer must submit operation and maintenance instructions for the system to the health department and to the owner. The instructions must describe the activities necessary to properly operate and maintain the system. Trouble shooting information must also be included.

C. All requirements stated elsewhere in this rule for design, construction and installation details, performance, failures, repairs and abandonment shall apply unless stated differently for a given alternative system.

11.2. At-Grade Systems.

A. Design Requirements.

1. Absorption trenches and absorption bed type absorption systems may be placed in the at-grade position provided:

a. Invert of effluent distribution pipe or the bottom of the absorption trench is placed at the native ground surface.

b. the elevation of the anticipated maximum ground water table shall be:

i. at least 24 inches below the bottom of the absorption system excavation; and,

ii. at least 48 inches below finished grade.

c. at least 48 inches of suitable soil percolating between:

i. one and 60 minutes per inch for absorption trench, or,

500 ii. one to 30 minutes per inch for absorption beds is
501 available between bedrock or impervious strata and the bottom of
502 the absorption system excavation.

503 d. The native ground surface does not slope more than four
504 percent for installation of an at-grade system.

505 e. all other requirements of this rule for:

506 i. minimum horizontal distances from the stated feature to
507 the toe of the finished at-grade system in Table 2,

508 ii. area requirements and construction details for
509 absorption trenches in Tables 7, 8 and 9,

510 iii. area requirements and construction details for
511 absorption beds in Tables 13 and 14, are met.

512 2. Minimum of two observation ports shall be provided within
513 absorption area.

514 B. Construction Details.

515 1. The site shall be cleared of vegetation.

516 2. The soil at the surface shall be loosened and broken up
517 to an approximate depth of six inches.

518 3. No tilling shall be permitted.

519 4. Any furrows resulting from the scarification shall be
520 perpendicular to any slope on the site.

521 5. When fill is placed where finished contours are above the
522 natural ground surface, it shall extend from the center of the
523 wastewater system at the same general top elevation for a minimum
524 of ten feet in all directions beyond the limits of the disposal
525 area perimeter below, before the beginning of the side slope.

526 6. The site shall be graded such that surface water drains
527 away from the onsite wastewater system and adjoining area.

528 7. The maximum side slope for above ground fill shall be
529 four (horizontal) to one (vertical).

530 11.3 Earth fill systems.

531 A. Design Requirements.

532 1. Earth fill may be added to a site or naturally existing
533 soil with a percolation rate less than one minute per inch or more
534 than 60 minutes per inch may be removed and replaced with earth
535 fill with an acceptable, in-place percolation rate, if:

536 2. the removal of the original soil does not cause other
537 unacceptable site conditions, and, wastewater ponding will not
538 occur below the bottom of the absorption system;

539 3. the elevation of the anticipated maximum ground water
540 table shall be at least 12 inches below the natural ground
541 surface.

542 4. Minimum depth of suitable soil percolating between one
543 and 60 minutes per inch available between bedrock or impervious
544 strata and:

545 a. the native ground surface must not be less than 36
546 inches, or,

547 b. the bottom of the absorption system trench must not be
548 less than 48 inches, which ever is greater.

549 5. all other requirements of this rule for:

a. minimum horizontal distances in Table 2,
b. area requirements and construction details for
absorption trenches in Tables 7, 8 and 9, are met.
6. The fill area shall be sufficient to:
a. accommodate an absorption system for a home with a
minimum of three bedrooms, and shall include all required
clearances within, and outside of the fill and absorption system
area.
b. install a system sized for greater of three bedrooms or
the planned number of bedrooms in the home, using the percolation
rate of 60 minutes per inch.
c. include the area required for a 100 percent replacement
of the absorption system, with all required clearances.
7. The area between trenches shall not be used for
replacement area.
8. The earth fill shall be considered to be acceptably
stabilized if it is allowed to naturally settle for a minimum
period of one year, sized to result in its minimum required
dimensions after the settling period. Mechanical compaction shall
not be allowed.
9. After the fill has settled for a minimum of one year,
a minimum of two (2) percolation tests/soil exploration tests
shall be conducted in the fill. One shall be conducted in the
proposed absorption system area and one in the proposed
replacement area of the fill. The suitably stabilized fill shall
have an in-place percolation rate of between 15 and 45 minutes per
inch.
10. Maximum acceptable slope of original site surface for
placement of an earth fill system is four percent.
11. The fill depth below the bottom of the absorption system
to the native ground surface shall not exceed six feet.
12. Minimum of two observation ports shall be provided
within absorption area.
B. Construction Details.
1. The site shall be cleared of vegetation.
2. The surface soil shall be loosened and broken up to an
approximate depth of six inches.
3. No tilling shall be permitted.
4. Any furrows resulting from the scarification shall be
perpendicular to any slope on the site.
5. The site shall be graded such that surface water drains
away from the onsite wastewater system and adjoining area.
6. The maximum exposed side slope for fill surfaces shall be
four horizontal to one vertical.
7. When fill is placed where finished contours are above the
natural ground surface, it shall extend from the center of the
wastewater system at the same general top elevation for a minimum
of ten feet in all directions beyond the limits of the disposal
area perimeter below, before the beginning of the side slope.
8. A suitable soil cap, which will support a vegetative

cover, shall cover the entire fill body. The cap shall be provided with a vegetative cover. Access to the fill site shall be restricted to minimize erosion and other physical damage.

11.4 Mound systems.

A. Design Requirements.

1. Mound system may be built over naturally existing soils with a percolation rates between one to 60 minutes per inch provided:

a. the elevation of the anticipated maximum ground water table shall be at least 12 inches below the natural ground surface.

b. a minimum of one foot of approved sand and one foot of natural soil percolating between one to 60 minutes per inch is available to form the minimum two feet of unsaturated soil below the bottom of the absorption system.

c. at least 36 inches of suitable soil percolating between one and 60 minutes per inch is available between bedrock or impervious strata and the native ground surface.

2. all other requirements of this rule for:

a. minimum horizontal distances in Table 2, and,

b. installation in sloping ground are met.

3. The design shall be based on:

a. a minimum of 300 gallons per day for two bedrooms with 150 gallons per day for each additional bedroom.

b. Linear hydraulic loading rate of:

i. three to four gallons per day per foot when the flow is shallow and primarily lateral, or,

ii. eight to ten gallons per day per foot when the flow is away from the system and primarily downward.

c. Sand fill hydraulic loading rate shall not be greater than 0.8 gallons per day per square foot of absorption system bottom area.

d. Soil (basal) hydraulic loading or application rate at sand fill to native soil interface using a relationship: q (gallons per day per square foot) = $1.2995 \times \text{percolation rate (minutes per inch)}^{-0.4421}$, or as shown in Table 15:

Table 15

Effluent loading rates

from sand fill to native soil interface

(Based on Percolation Test Rates)

<u>Percolation Rate</u>	<u>gallons per day</u>
<u>(time in minutes required</u>	<u>per square foot</u>
<u>for water to fall one inch)</u>	
<u>1-10</u>	<u>0,45</u>
<u>11-15</u>	<u>0.40</u>
<u>16-20</u>	<u>0.35</u>
<u>21-30</u>	<u>0.30</u>

31-45	0.25
46-60	0.20

e. Distribution Cell (Refer to the graphic available for nomenclature from the Division):

i. Area (A x B) shall be the ratio of design flow and sand fill hydraulic loading rate, where the maximum width (A) shall be ten feet,

ii. Length (B) shall be the ratio of:

(1). linear hydraulic loading rate and the design flow when soil application rate is less than 0.3 gallons per day per square foot, or,

(2). linear hydraulic loading rate and the design flow when soil application rate is less than 0.3 gallons per day per square foot, or,

f. Mound fill depth (D) shall be the difference of a minimum of four feet of suitable soil percolating between one and 60 minutes per inch under the absorption system (aggregate and sand fill interface), and, a minimum of two feet.

g. Mound fill depth at down slope edge (E) shall be the sum of Mound fill depth (D) and Absorption area width (A), times the slope of the native ground surface expressed as a decimal.

h. Mound Depth (F) shall be the sum of depth of aggregate (not less than six inches) and depth of aggregate cover over the distribution pipe (not less than two inches), and, nominal diameter of distribution pipe.

i. The minimum depth of cover shall be 12 inches at distribution cell edges (G), and 18 inches at the center of distribution cell (H).

j. Down slope width (I) shall be greater of:

i. Fill depth at the down slope edge of distribution cell (Mound fill depth at down slope edge (E) + Mound Depth (F) + depth of cover at distribution cell edges (G)) x horizontal gradient of side slope (3 if 3:1) x slope correction factor which is (100 / (100 - (3 x per cent of slope) if 3:1), or,

ii. difference of ratio of linear loading and soil application rates and liner loading and sand fill loading rates.

k. Up slope width (J) shall be: Fill depth at the up slope edge of distribution cell (Mound fill depth (D) + Mound Depth (F) + depth of cover at distribution cell edges (G)) x horizontal gradient of side slope (3 if 3:1) x slope correction factor which is (100 / (100 + (3 x per cent of slope) if 3:1).

l. End slope width (K) shall be: Total fill at the center of distribution cell (Mound fill depth (D) + Mound fill depth at down slope edge (E))/2 + Mound Depth (F) + depth of cover at the center of distribution cell (H)) x horizontal gradient of side slope (3 if 3:1).

m. Fill length (L) shall be: Distribution cell length (B) + 2 x end slope width (K).

n. Depth, width and length of distribution cell, sand fill

and aggregate shall be as required in Mound Component Manual Version 2, Wisconsin Department of Commerce, January 2001, available from the Division.

o. Effluent distribution shall be pressurized.

p. Minimum of two observation ports shall be provided within absorption area.

B. Construction Details.

1. The site shall be cleared of vegetation and scarified to an approximate depth of six inches. Any furrows resulting from the scarification shall be perpendicular to any slope on the site.

2. The surface soil shall be loosened and broken up to an approximate depth of six inches.

3. The site shall be graded such that surface water drains away from the onsite wastewater system and adjoining area.

4. The minimum thickness of aggregate media around the distribution pipes of the absorption system shall be the sum of six inches below the distribution pipe, the diameter of the distribution pipe and two inches above the distribution pipe or ten inches, whichever is larger.

5. The material for soil cap shall not be less than six inches in thickness and provide protection against erosion, frost, storm water infiltration and support vegetative growth and aeration of distribution cell.

6. Sand fill must meet ASTM Specification C-33 for fine aggregate.

7. A minimum of two observation pipes shall be located at opposite end of each distribution cell and 1/5 to 1/10 the length of distribution cell measured from the end of the cell.

8. Distribution laterals must be:

a. of 3/4 inch to 3 inch in diameter;

b. placed within four feet of each other within distribution cell;

c. provided with a stand pipe for access from the surface for cleaning;

d. provided with orifices:

i. 1/4 or 3/16 inches inch in diameter;

ii. spaced between 30 to 36 inches, and

iii. between six inches to two feet from the edge of distribution cell.

9. Distal head in a lateral must be no less than 2.5 feet for 1/4-inch diameter orifice and 3.5 ft for 3/16-inch diameter orifice.

10. An automatic visual or audible alarm indicating the failure of the pump shall be provided, and shall remain on until turned off manually.

11.5. Packed Bed Media systems.

A. Design Requirements.

1. Packed bed media systems may be used provided:

a. the elevation of the anticipated maximum ground water table shall be at least 12 inches below the natural ground

750 surface.

751 b. acceptable percolation rate for packed bed media system
752 effluent dispersal is up to 120 minutes per inch;

753 c. at least 36 inches of suitable soil below the bottom of
754 the absorption trench, percolating between one and 120 minutes per
755 inch is available for packed bed media system effluent dispersal,
756 between bedrock or impervious strata and the native ground
757 surface.

758 d. At least 18 inches of suitable soil percolating between
759 one and 120 minutes per inch is available for packed bed media
760 system effluent dispersal, between bedrock or impervious strata
761 and the native ground surface with an evaluation of infiltration
762 rate and hydrogeology from a professional geologist or
763 geotechnical engineer licensed to practice in Utah based on:

764 i. type, extent of fractures, presence of bedding planes,
765 angle of dip,

766 ii. hydrogeology of surrounding area, and,

767 iii. cumulative effect of all existing and future systems
768 within the area for any localized mounding or surfacing which may
769 create a public health hazard or nuisance, description of methods
770 used to determine infiltration rate and evaluation of surfacing
771 or mounding conditions.

772 e. all other requirements of this rule for:

773 i. installation of absorption trenches in sloping ground,
774 and,

775 ii. minimum horizontal distances in Table 2, except for
776 water course, lake, pond, reservoir, non-culinary spring,
777 foundation drain, curtain drain or grouted well which require a
778 minimum of 50 feet of separation from absorption trench are met.

779 2. The design shall be based on:

780 a. a minimum of 300 gallons per day for two bedrooms and 150
781 gallons per day for each additional bedroom.

782 b. Intermittent Sand Filter System:

783 i. Media

784 (1). Depth - Minimum 24 inches of washed sand

785 (2). Effective size - 0.35 to 0.5 millimeter

786 (3). Uniformity Coefficient - less than 4.0

787 (4). Maximum Passing through #200 Sieve - one percent

788 (5). Voids - 30 percent

789 (6). Surface area - 800 - 1000 square feet per cubic foot

790 ii. Maximum Application rate - 1.2 gallons per day per
791 square foot of media

792 iii. Doses per day - 18 to 24

793 iv. Recirculation ratio - none

794 c. Re-circulating Sand Filter System:

795 i. Media

796 (1). Depth - Minimum 24 inches of washed sand

797 (2). Effective size - 1.5 to 2.5 millimeter

798 (3). Uniformity Coefficient - less than 3.0

799 (4). Maximum Passing through #50 Sieve - one percent

800 (5). Voids - 30 percent
801 (6). Surface area - 500 - 700 square feet per cubic foot
802 ii. Maximum Application rate - 5.0 gallons per day per
803 square foot of media
804 iii. Doses per day - 48 -96
805 iv. Recirculation ratio - 4:1 at peak flow.
806 d. Re-circulating Gravel Filter System:
807 i. Media
808 (1). Depth - Minimum 36 inches of washed gravel
809 (2). Effective size - 1.5 to 5.0 millimeter
810 (3). Uniformity Coefficient - less than 2.0
811 (4). Maximum Passing through #16 Sieve - one percent
812 (5). Voids - 30 percent
813 (6). Surface area - 500 - 700 square feet per cubic foot
814 ii. Maximum Application rate - 5.0 gallons per day per
815 square foot of media
816 iii. Doses per day - 48 -96
817 iv. Recirculation ratio - 4:1 @ peak flow.
818 d. Re-circulating Gravel Filter System:
819 i. Media
820 (1). Depth - Minimum 36 inches of washed gravel
821 (2). Effective size - 1.5 to 5.0 millimeter
822 (3). Uniformity Coefficient - less than 2.0
823 (4). Maximum Passing through #16 Sieve - one percent
824 (5). Voids - 30 percent
825 (6). Surface area - 500 - 700 square feet per cubic foot
826 ii. Application rate - 5.0 gallons per day per square foot
827 of media
828 iii. Doses per day - 48 - 96
829 iv. Recirculation ratio - 5:1 @ peak flow.
830 e. Textile Filter System:
831 i. Media
832 (1). Geotextile, AdvanTex or approved equal
833 (2). Voids - more than 80 percent
834 (3). Surface area - 2400 - 4800 square feet per cubic foot
835 ii. Maximum Application rate - 30.0 gallons per day per
836 square foot of media
837 iii. Doses per day - 72 - 144
838 iv. Recirculation ratio - 3:1 @ peak flow.
839 f. Peat Filter:
840 i. Media
841 (1). Depth - Minimum 24 inches of peat media
842 (2). Effective size - 0.25 to 2.0 millimeter
843 (3). Voids - 90 percent
844 (4). Surface area - 500,000 square feet per cubic foot
845 ii. Maximum Application rate - 5 gallons per day per square
846 foot of media
847 iii. Doses per day - up to 300
848 iv. Recirculation ratio - none
849 3. The filter bed must be pressure dosed. Orifices or

nozzles shall be of such size that the difference in discharge between the first orifice or nozzle and the last orifice or nozzle in each lateral is less than ten percent. The lateral ends must be equipped with fittings and or enclosures to allow cleaning and servicing from the surface.

4. Recirculation Tank:

a. capacity shall be equal to:

i. at least design flow for one day, or,

ii. other volume supported by the basis of design and operation.

b. design shall include dosing rate, operating, surge and reserve capacities.

c. The recirculation ratio should be adjusted, as necessary during operation and maintenance inspections; ranging from 3:1 to 7:1.

d. Access to the tanks shall be watertight to the finished grade. Any joint in the riser must be tested during the tank watertight test.

5. Outlet of septic tanks upstream of packed bed media shall be fitted with effluent filter.

6. Pumping Equipment and Controls:

a. The system shall be equipped with a programmable control panel. The controls shall be capable of controlling all functions incorporated or required in the design of the system. All system control panels must be equipped with an automatic visual or audible alarm indicating the failure of the pump shall be provided, and shall remain on until turned off manually.

b. The control panel must include a pump run-time hour meter and a pump event counter or other acceptable flow measurement method.

c. The control panel must be installed within sight of the access risers.

d. The control panel must be rated for exterior use. The enclosure must be rated for NEMA 4X or better.

e. The pumps shall be capable of delivering the design flow at the calculated total dynamic head for the proposed system. Supporting hydraulic calculations and pump curve analysis must be submitted to the health department with the design.

f. The pump selected must be rated for the number of cycles anticipated at peak flow conditions.

7. Packed bed system media effluent shall be distributed by gravity or under pressure in an absorption trench designed:

a. in accordance with Table 7 of this rule for soils percolating between one to 60 minutes per inch.

b. Using the equation:

i. $q = 2.1687 \times t^{(-0.3806)}$ where t is the percolation rate in minutes per inch, and q is in gallons per day per square foot, or,

ii. Area in square feet per bed room = $69.16 \times t^{(0.3806)}$ where t is the percolation rate in minutes per inch.

c. Dispersal area may be reduced by multiplying the area reduction factor shown in Table 16:

Table 16
Area Reduction Factors

<u>System</u>	<u>Factor</u>
<u>Intermittent Sand Filter</u>	<u>0.85</u>
<u>Re-circulating Sand Filter</u>	<u>0.80</u>
<u>Re-circulating Gravel Filter</u>	<u>0.80</u>
<u>Textile Filters</u>	<u>0.75</u>
<u>Peat Filters</u>	<u>0.80</u>

d. Effluent distribution may be by gravity or under pressure.

e. Drip irrigation system may be used for packed bed media system effluent disposal based on type of soil and drip irrigation manufacturer's recommendations.

f. Minimum of two observation ports shall be provided within absorption area.

8. Performance of Packed Bed Media Systems

a. Packed bed media system performance shall be monitored at an interval not exceeding six calendar months for surfacing in absorption trench area, odors around filter systems, equipment malfunction, and effluent quality of a grab sample showing no more than 20 nephelometric turbidity units (NTU), or five-day total or carbonaceous biochemical oxygen demand and total suspended solids concentration of no more than 25 milligrams per liter.

b. Effluent turbidity exceeding 20 NTU shall be followed up with two successive week testing within a 30-day period from the first exceedance. When two successive effluent testing shows results in excess of 20 NTU, the system shall be deemed to be non-compliant requiring further evaluation with five-day total or carbonaceous biochemical oxygen demand and total suspended solids concentrations, and a corrective action plan.

c. Corrective action is required where the effluent quality does not meet the minimum standard for more than 30 days.

d. For non-complying systems, the health department shall require and order:

i. all necessary steps such as maintenance servicing, repairs, and/or replacement of system components to correct malfunctioning or non-compliant system;

ii. effluent quality testing for turbidity, five-day total or carbonaceous biochemical oxygen demand, and suspended solids shall continue every two weeks until three successive samples are found to be in compliance;

iii. payment of fines, fees for additional inspections reviews and testing;

iv. evaluation of the system design including non-approved

changes to the system, and the wastewater flow volume, the biological and or chemical loading to the system;

v. investigate the household practices, or discharge of hazardous chemicals into the system, such as, water softener brine, photo finishing chemicals, laboratory chemicals, excessive amount of cleaners or detergents, etc.; and,

vi. additional tests or samples to troubleshoot the system malfunction.

B. Construction Details

i. The site shall be graded such that surface water drains away from the onsite wastewater system and adjoining area.

~~[11.1. Administrative Requirements. The local health department having jurisdiction must obtain approval from the division to administer an alternative onsite wastewater system program, as outlined in this section, prior to permitting alternative onsite wastewater systems. Alternative onsite wastewater systems are only to be installed where site limitations prevent the use of conventional onsite wastewater systems.~~

~~A. The following alternative onsite wastewater systems may be considered for use upon the executive secretary's approval of a written request from the local health department to administer an alternative onsite wastewater system program.~~

TABLE 15

System	Rule Reference
Earth fill Systems	R317 4 11.2
"At Grade" Systems	R317 4 11.3
Mound Systems	R317 4 11.4

~~The local health department request for approval must include a description of their plan to properly manage these systems to protect public health and water quality. This plan must include:~~

~~1. Documentation of the adequacy of staff resources to manage the increased work load.~~

~~2. Documentation of the technical capability to administer the new systems including any training plans which are needed.~~

~~3. A description of measures to be taken by the local health department to insure that designers and installers of these systems are qualified.~~

~~4. A description of the methods which will be used to determine the maximum anticipated high ground water table elevation.~~

~~5. Documentation that the Local Board of Health and County Commission support this request.~~

~~6. A description of how these systems will be managed, inspected and monitored.~~

~~7. A ground water management plan which identifies maximum septic system densities to be allowed in order to prevent unacceptable degradation of ground water, or a schedule for~~

1000 completing an acceptable plan within one year. This requirement
1001 may be waived or modified by the executive secretary where it can
1002 be shown that these systems would be relatively few in number and
1003 widely separated, thereby having negligible impact on ground water
1004 quality, or where the ground water aquifers vary greatly over
1005 relatively short distances making such a ground water study
1006 impractical.

1007 8. Documentation of the county's legal authority to
1008 implement and enforce correction of malfunctioning systems and
1009 their commitment to exercise this authority.

1010 B. All alternative onsite wastewater systems shall be
1011 designed, installed and operated under the following conditions:

1012 1. The ground water requirements shall be determined as
1013 shown in R317 4 5.

1014 2. The local health department must advise the owner of the
1015 system of the alternative status of that type of system. The
1016 advisory must contain information concerning risk of failure,
1017 level of maintenance required, financial liability for repair,
1018 modification or replacement of a failed system and periodic
1019 monitoring requirements which are all specific to the type of
1020 system to be installed.

1021 3. The local health department and the homeowner shall be
1022 provided with sufficient design, installation and operating
1023 information to produce a successful, properly operating
1024 installation.

1025 4. The local health department is responsible for provision
1026 of, or oversight of an approved installation, inspection and
1027 maintenance and monitoring program for the systems. Such programs
1028 shall include approved procedures for complete periodic
1029 maintenance and monitoring of the systems.

1030 5. The local health department may impose more stringent
1031 design, installation, operating and monitoring conditions than
1032 those required by the Division.

1033 6. All failures, repairs or alterations shall be reported to
1034 the local health department. All repairs or alterations must be
1035 approved by the local health department.

1036 C. When an alternative onsite wastewater system exists on a
1037 property, notification of the existence of that system shall be
1038 recorded on the deed of ownership for that property.

1039 11.2. Installation in Earth Fill.

1040 A. Installation of absorption systems in earth fill will be
1041 allowed only by the regulatory authority having jurisdiction in
1042 accordance with these rules. Installation of absorption systems in
1043 earth fill is an alternative disposal method. Conditions for use
1044 of alternative onsite wastewater systems are shown in R317 4 11.

1045 B. Absorption trenches and absorption bed type systems may
1046 be placed in earth fill. Absorption trench systems placed in
1047 earth fill can only be installed over natural soils with a
1048 percolation rate range between five and 60 minutes per inch; and
1049 absorption bed systems over soils with a percolation rate range of

1050 ~~five to 30 minutes per inch.~~

1051 ~~—— C. Naturally existing soil with an unacceptable percolation~~
1052 ~~rate may be removed and replaced with earth fill with an~~
1053 ~~acceptable, in place percolation rate, if the removal of the~~
1054 ~~original soil does not cause other unacceptable site conditions~~
1055 ~~and if acceptable natural soil exists below the replacement. The~~
1056 ~~site must conform to all other acceptability conditions.~~

1057 ~~—— D. The maximum acceptable existing slope of a site upon~~
1058 ~~which an "at grade" or "above grade" onsite system can be placed~~
1059 ~~with the use of earth fill is four percent.~~

1060 ~~—— E. The minimum area of fill to be placed shall be sufficient~~
1061 ~~to install a system sized for the number of bedrooms in the home,~~
1062 ~~using the percolation rate of 60 minutes per inch. The fill area~~
1063 ~~shall be sized to accommodate an absorption system for a home with~~
1064 ~~a minimum of three bedrooms, and shall include all required~~
1065 ~~clearances within, and outside of the fill and absorption system~~
1066 ~~area.~~

1067 ~~—— F. The area of original fill placement shall include that~~
1068 ~~area required for a 100 percent replacement of the drainfield,~~
1069 ~~with all required clearances. The area between trenches shall not~~
1070 ~~be used for replacement area.~~

1071 ~~—— G. The fill depth below the bottom of the absorption system~~
1072 ~~shall not exceed six feet.~~

1073 ~~—— H. The minimum separation between the natural ground surface~~
1074 ~~and the anticipated maximum ground water table or saturated soil~~
1075 ~~shall be twelve (12) inches.~~

1076 ~~—— I. The earth fill shall be considered to be acceptably~~
1077 ~~stabilized if it is allowed to naturally settle for a minimum~~
1078 ~~period of one year, sized to result in its minimum required~~
1079 ~~dimensions after the settling period. Mechanical compaction shall~~
1080 ~~not be allowed.~~

1081 ~~—— J. All onsite wastewater systems placed in earth fill shall~~
1082 ~~conform to all other applicable requirements of R317-4, "Onsite~~
1083 ~~Wastewater Systems".~~

1084 ~~—— K. The onsite wastewater system and local area surrounding~~
1085 ~~them shall be graded to drain surface water away from the~~
1086 ~~absorption system.~~

1087 ~~—— L. After the fill has settled for a minimum of one year, a~~
1088 ~~minimum of two (2) percolation tests/soil exploration tests shall~~
1089 ~~be conducted in the fill. One shall be conducted in the proposed~~
1090 ~~absorption system area and one in the proposed replacement area of~~
1091 ~~the fill. The suitably stabilized fill shall have an in place~~
1092 ~~percolation rate of between 15 and 45 minutes per inch.~~

1093 ~~—— M. The maximum exposed side slope for fill surfaces shall be~~
1094 ~~four horizontal to one vertical. When fill is placed where~~
1095 ~~finished contours are above the natural ground surface, it shall~~
1096 ~~extend from the center of the wastewater system at the same~~
1097 ~~general top elevation for a minimum of ten feet in all directions~~
1098 ~~beyond the limits of the disposal area perimeter below, before the~~
1099 ~~beginning of the side slope. A suitable soil cap, which will~~

support a vegetative cover, shall cover the entire fill body. The cap shall be provided with a vegetative cover. Access to the fill site shall be restricted to minimize erosion and other physical damage.

~~11.3. "At Grade" Systems.~~

~~A. Where site conditions may restrict the installation of a standard absorption system, an "at grade" system may be used. It shall be designed, installed, operated and monitored in accordance with these rules. An "at grade" system is considered to be an alternative disposal method. Conditions for use of alternative wastewater systems are shown in R317-4 11.~~

~~B. Absorption trenches and absorption bed type absorption systems may be placed in the "at grade" position. Absorption systems placed "at grade" can only be installed over natural soils with a percolation rate range between five and 60 minutes per inch; and absorption bed systems over soils with a percolation rate range of five to 30 minutes per inch.~~

~~C. The minimum distance from the top of finished grade to the high seasonal ground water table or perched ground water table shall be four feet.~~

~~D. When fill is placed where finished contours are above the natural ground surface, it shall extend from the center of the wastewater system at the same general top elevation for a minimum of ten feet in all directions beyond the limits of the disposal area perimeter below, before the beginning of the side slope.~~

~~E. The maximum side slope for above ground fill shall be four (horizontal) : one (Vertical).~~

~~F. Maximum acceptable slope of original site surface for placement of an "at grade" system is four percent.~~

~~G. The site shall be cleared of vegetation and scarified to an approximate depth of six inches. Any furrows resulting from the scarification shall be perpendicular to any slope on the site.~~

~~11.4. Mound Systems.~~

~~A. Where site conditions may restrict the use of a standard absorption system, a mound system may be used. It shall be designed, installed, operated and monitored in accordance with these rules. A mound system is considered to be an alternative disposal method. Conditions for use of alternative wastewater systems are shown in R317-4 11.1.~~

~~B. The minimum separation between the natural ground surface and the anticipated maximum ground water table or saturated soil shall be twelve (12) inches.~~

~~C. The two foot minimum thick unsaturated soil treatment horizon below the bottom of the absorption system shall consist of a minimum of one foot of suitable natural soil.~~

~~D. Mound systems shall not be located on sites where the original prevailing surface grade exceeds four percent.~~

~~E. All mound type onsite systems shall utilize pressurized systems for distribution of effluent in the absorption system.~~

~~F. The local health department in whose jurisdiction the~~

~~mounds with pressurized systems are to be used, shall have an approved maintenance program in place.~~

~~G. The design effluent loading rate through the absorption system bottom to sand fill interface shall be 0.8 gallons per day per square foot of absorption system bottom area.~~

~~H. The effluent loading rate at the sand fill to native soil interface shall as specified in Table 16.~~

~~TABLE 16~~

~~Effluent Loading Rate from Sand Fill to the Natural Soil Surface~~

PERCOLATION RATE OF NATURAL SOIL (Minutes per inch)	UNIT	LOADING RATE
--	-----------------	-------------------------

1 10	gallons per day	0.45
	per square foot	

11 15	gallons per day	0.40
	per square foot	

16 20	gallons per day	0.35
	per square foot	

21 30	gallons per day	0.30
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	per square foot	
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31 45	gallons per day	0.25
------------------	----------------------------	-----------------

	per square foot	
--	----------------------------	--

46 60	gallons per day	0.20
------------------	----------------------------	-----------------

	per square foot	
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~~I. The minimum thickness of aggregate media around the distribution pipes of the absorption system shall be the sum of six inches below the distribution pipe, the diameter of the distribution pipe and two inches above the distribution pipe or ten inches, whichever is larger.~~

~~J. Mound systems shall be designed in accordance with "Mound Soil Absorption System Siting, Design and Construction Guidance Manual, April 1, 1996", which is hereby incorporated by reference. A copy is available for public review from the Division of Water Quality, 288 North 1460 West, P.O. Box 144870, Salt Lake City, UT, 84114 4870.~~

~~11.5. Supplemental Requirements for Maintenance and Monitoring of "At Grade" and Earth Fill Alternative Onsite Wastewater Systems.~~

~~A. These requirements are to be applied in addition to the requirements specified in R317-4-13 where applicable.~~

~~B. These systems shall be monitored at a period of six months and one year after initial use of the system and annually thereafter for a total of five years. Repairs shall be made at any time to a malfunctioning system, as soon as possible after the malfunction is discovered.~~

~~C. The local health department in whose jurisdiction the alternative system is installed shall be responsible for formulation of, administration and supervision of a maintenance and monitoring program that is approved by the Division.~~

~~11.6. Supplemental Requirements for Maintenance and Monitoring of Pressure Distribution Alternative Onsite Wastewater Systems.~~

~~A. These requirements are to be applied in addition to the requirements specified R317-4-13, where applicable.~~

~~B. These systems shall be monitored every six months throughout the life of the system. Repairs shall be made at any time to a malfunctioning system, as soon as possible after the malfunction is discovered.~~

~~C. The local health department in whose jurisdiction the pressurized system is installed shall be responsible for formulation of, administration and supervision of a maintenance and monitoring program that is approved by the Division.~~

~~D. Additional requirements for maintenance of these systems are contained in "Mound Soil Absorption System Siting, Design and Construction Guidance Manual, April 1, 1996", which is hereby incorporated by reference. A copy is available for public review from the Division of Water Quality, 288 North 1460 West, P.O. Box 144870, Salt Lake City, UT, 84114-4870.]~~

Sections R317-4-12 and 13 are not included herein as there is no change in those sections. A complete copy is available from the Division of Water Quality if desired.

KEY: waste water, onsite wastewater systems, alternative onsite wastewater systems, septic tanks
January 30, 2003

19-5-104